VERIFICATION OF A TRANSLATION

I, the below named translator, hereby declare that:

My name and post office address are as stated below;

That I am knowledgeable in the English language and in the language in which the below identified Japanese application was filed, and that I believe the attached English translation of the Japanese Patent Application No. 2000-163289 filed on May 31, 2000 is a true and complete translation of the above-identified Japanese application as filed.

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DOCUMENT NAME	Drawings	1
DOCUMENT NAME	Abstract	1
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[Document Name] Specification

[Title of the Invention] MASSAGING APPARATUS

[Claims]

1. A massaging apparatus comprising a massaging unit (7) having a therapeutic member for performing massaging motion provided so as to move along a user's body, characterized in that an equipment to be arranged on a specific portion of the user's body is provided so that a position of the equipment with respect to the massaging apparatus is detected to determine a position of the specific portion of the user with respect to the massaging apparatus.

2. A massaging apparatus comprising a massaging unit (7) having a therapeutic member for performing massaging motion provided so as to move along a user's body, characterized in that there are provided an equipment to be arranged on a specific portion of the user's body and a detecting means (59) for detecting a position of the equipment with respect to the massaging apparatus so that a position of the specific portion of the user with respect to the massaging apparatus is determined from the position of the equipment with respect to the massaging apparatus detected by the detecting means (59).

3. A massaging apparatus comprising a massaging unit (7) having a therapeutic member for performing massaging motion provided so as to move along a user's body, characterized in that a detecting means (59) is provided between an equipment

of the massaging apparatus to be arranged at a specific portion of the user's body and the massaging unit (7) for detecting that both of them are approaching with each other, so that a position of the specific portion of the user with respect to the massaging apparatus is determined from a position of the massaging unit (7) at the moment when the approach of the equipment and the massaging unit are detected by the detecting means (59).

4. A massaging apparatus as set forth in Claim 2 or 3, characterized in that the detecting means (59) comprises a magnetic body (57) mounted on one of the equipment and the massaging unit (7), and a magnetic sensor (58) mounted on the other one of them.

5. A massaging apparatus as set forth in Claim 2 or 3, characterized in that the equipment of the massaging apparatus is a pillow (51) of the massaging apparatus having a seatback portion (4), and the pillow (51) is mounted on the front surface of the seatback portion (4) so as to be adjustable in the upward and downward direction, so that the position of the specific portion of the user with respect to the massaging apparatus is determined by detecting a position of the pillow (51) arranged at the user's head.

6. A massaging apparatus as set forth in Claim 2 or 3, characterized in that the equipment of the massaging apparatus is a remote controller (63) for controlling the massaging

apparatus, and the position of the specific portion of the user with respect to the massaging apparatus is determined by detecting a position of the remote controller (63) with respect to the massaging apparatus when the user arranged the remote controller (63) at the specific portion of the user.

7. A massaging apparatus as set forth in any one of Claims 1 to 3, characterized in that a position of a shoulder with respect to the massaging apparatus is determined as the position of the specific portion of the user.

[Detailed Description of the Invention]

[Industrially Applicable Field]

The present invention relates to a massaging apparatus.

[Prior Art]

For example, there is a chair type massaging apparatus having a seat portion and a seatback portion, in which a massaging unit having a therapeutic member that performs massaging motion is provided in the seatback portion so as to move in the vertical direction along the body of the user, and the therapeutic member is adapted to perform massaging motion such as kneading and rapping (for example, Japanese Patent Laid-Open No. HEI 9-262263).

Since such a massaging apparatus of the related art is not generally constructed in such a manner that the position of the specific portion of the human body such as the shoulders or the hip of the user with respect to the massaging apparatus

is recognized automatically, when the user makes the massaging apparatus automatically perform shoulder massage or hip massage successively for example by selecting an automatic operation course, the user has to change the sitting position by himself/herself so that the therapeutic member of the supporting arm is placed on the desired location of the human body, or to operate the controller manually for fine adjustment of the moving position of the massaging unit.

In case of stimulating pressure points, which is well on its way to becoming a boom recent years, it is necessary to pinpoint the positions of the pressure points from the specific portion of the human body, such as shoulder, to some extent (for example about ± 1 cm). However, there is a problem in that accurate positioning of the therapeutic member on the massaging unit with respect to the pressure points is difficult and thus the effective stimulation of the pressure points cannot be performed, since the position of the specific portion of the human body such as shoulders of the user with respect to the massaging apparatus cannot be recognized automatically. For example, when performing kneading, rapping, and acupressure automatically for recovering from fatigue, though it is necessary to massage the specific position called "tenchu" and to apply acupressure therapy to the positions called "haiyu" and "kakuyu", it could not place the massaging member exactly on these pressure points.

There is also a massaging apparatus with an automatic massaging function that performs massaging motion according to the preset program while successively changing operating modes, operating positions, and operating time periods of the therapeutic member, comprising a massaging unit that makes the therapeutic member perform rapping motion or kneading motion or the like by the rotating power of the motor and is provided in the seatback portion, in which the vertical distribution of the pressure applied to the therapeutic member from the human body is obtained by moving the therapeutic member upward and downward while maintaining the extent of projection of the therapeutic member toward the human body to determine the position of shoulders therefrom (for example, Japanese Patent Laid-Open No. HEI 6-190012).

However, the detection of the pressure in this case is performed by detecting the displacement of the spring that is compressed by a reaction force generated when the therapeutic member presses the human body from the back via an arm or the like, or by detecting the pressure applied to the therapeutic member from the human body by mechanical displacement, and thus it is difficult to detect a slight change in pressure applied to the therapeutic member from the human body. As a consequence, the positions of the shoulders and the hip of the user cannot be determined accurately, and it is difficult to place the therapeutic member exactly on the pressure points of the body,

and thus effective massaging cannot be performed in case where it is desired to apply acupressure to the pressure points suitable to the symptom successively and automatically.

In addition, there is recognized another problem in that an arm for transmitting a reaction force applied when the therapeutic member presses the human body from the back, a spring for receiving a reaction force from the massaging member, and a spring holding mechanism for holding the spring are additionally required in order to detect the pressure that is applied to the therapeutic member by the human body by mechanical displacement thereof, thereby complicating the construction of the pressure detection mechanism.

[Problems to be Solved by the Invention]

With the problems described above in view, the present invention provides a massaging apparatus that can determine a position of a specific portion of a user's body such as shoulders with respect to the massaging apparatus accurately in a simple construction.

[Means for Solving the Problems]

The technical means of the present invention for solving the problems described above is, in a massaging apparatus comprising a massaging unit 7 having a therapeutic member for performing massaging motion provided so as to move along a user's body, that an equipment to be arranged on a specific portion of the user's body is provided so that a position of

the equipment with respect to the massaging apparatus is detected to determine a position of the specific portion of the user with respect to the massaging apparatus.

Another technical means of the present invention is, in a massaging apparatus comprising a massaging unit 7 having a therapeutic member for performing massaging motion provided so as to move along a user's body, that an equipment to be arranged on a specific portion of the user's body and a detecting means 59 for detecting a position of the equipment with respect to the massaging apparatus are provided so that a position of the specific portion of the user with respect to the massaging apparatus is determined from the position of the equipment with respect to the massaging apparatus detected by the detecting means 59.

Still another technical means of the present invention is, in a massaging apparatus comprising a massaging unit 7 having a therapeutic member for performing massaging motion provided so as to move along a user's body, that a detecting means 59 is provided between an equipment of the massaging apparatus to be arranged at a specific portion of the user's body and the massaging unit 7 for detecting that both of them are approaching with each other, so that a position of the specific portion of the user with respect to the massaging apparatus is determined from a position of the massaging unit 7 at the moment when detection is made by the detecting means

59.

Further technical means of the present invention is that the detecting means 59 comprises a magnetic body 57 mounted on one of the equipment and the massaging unit 7 and a magnetic sensor 58 mounted on the other one of them.

Still further technical means of the present invention is that the equipment of the massaging apparatus is a pillow 51 of the massaging apparatus having a seatback portion 4, and the pillow 51 is mounted on the front surface of the seatback portion 4 so as to be adjustable in the upward and downward direction, so that a position of a specific portion of the user with respect to the massaging apparatus is determined by detecting a position of the pillow 51 arranged at the user's head.

Another technical means of the present invention is that the equipment of the massaging apparatus is a remote controller 63 for controlling the massaging apparatus, and a position of a specific portion of the user with respect to the massaging apparatus is determined by detecting a position of the remote controller 63 with respect to the massaging apparatus when the user arranged the remote controller 63 at the specific portion of the user.

Still another technical means of the present invention is that a position of the shoulder with respect to the massaging apparatus is determined as a position of a specific portion

of the user.

[Mode for Carrying Out the Invention]

Hereinafter, embodiments of the present invention will be described referring to figures.

Fig. 1 shows a general construction of a chair type massaging apparatus 1. In Fig. 1, the chair type massaging apparatus 1 comprises a seat portion 3 supported by a leg body 2, a seatback portion 4 provided on the back of the seat portion 3, and armrest portions 5 provided on the left and the right sides of the seat portion 3. The seatback portion 4 is adapted to be reclined by a reclining device 6 with the rear end side of the seat portion 3 as a fulcrum point.

A massaging unit 7 is provided in the seatback portion 4. The massaging unit 7 comprises, as shown in Fig. 4 as well, a first therapeutic member (kneading ball, massaging roller) 8, a second therapeutic member (kneading ball, massaging roller) 9, a massage motor 10, a transmission mechanism 11 for transmitting the rotational power of the massage motor 10 to the therapeutic members 8, 9 to allow the respective therapeutic members 8, 9 to perform kneading motion or rapping motion, and a supporting frame 14, wherein the massaging unit 7 is constructed so as to move in the seatback portion 4 vertically by a hoist means 13.

The hoist means 13 employs a mechanism that moves the massaging unit 7 upward and downward by rotating a feed screw

15 threadingly engaged with the supporting frame 14 of the massaging unit 7 by means of the hoist motor 16.

The hoist means 13 may be replaced with means employing a wrapping drive mechanism, a rack-and-pinion engaging structure, or a hoist drive structure using a fluid pressure cylinder or the like.

The transmission mechanism 11 of the massaging unit 7 comprises, as shown in Fig. 4 to Fig. 6, a drive unit 21 having a kneading motion shaft 19 and a rapping motion shaft 20 projecting toward the left and the right sides, a pair of left and right drive arms 25 held by the motion shafts 19, 20, and a pair of left and right supporting arms 26 fixed on the tips of the respective drive arms 25.

The above-described drive unit 21 can be switched as desired between a state of allowing the drive arm 25 to take the components of lateral movement out from the rotating power of the massage motor 10 via the kneading motion shaft 19 to perform kneading motion, and a state of allowing the drive arm 25 to take components of fore-and-aft swinging motion out from the rotating power of the massage motor 10 via the rapping motion shaft 20 to perform rapping motion.

The motion shafts 19, 20 are laterally arranged in parallel with each other and rotatably supported on the case of the drive unit 21 via bearings respectively. These motion shafts 19, 20 are adapted in such a manner that one of these

two shafts is selected at a transmission mechanism 11 to receive rotational motion from the massage motor 10 to rotate in the directions shown by the arrows A or B in Fig. 7.

The rapping motion shaft 20 is provided on both ends thereof with an eccentric shaft portions 20A, 20A that are off-centered in the opposite direction from each other on both ends, and the kneading motion shaft 19 is provided with a inclined shaft portions 19A, 19A on both ends. The eccentric shaft portion 20A of the rapping motion shaft 20 and the inclined shaft portion 19A of the kneading motion shaft 19 are connected by a linkage 28. The linkage 28 comprises a plate-shape drive arm 25, a ball joint 29 connected to the drive arm 25, and a connecting arm 31 connected to the shaft portion of the ball joint 29 by a pin 30. The drive arm 25 is rotatably supported on the inclined shaft portion 19A, and the connecting arm 31 is pivotally mounted on the eccentric shaft portion 20A.

In this arrangement, when the rapping motion shaft 20 rotates in the direction A, the eccentric shaft portion 20A of the rapping motion shaft 20 allows the therapeutic members 8, 9 to reciprocate in the direction A1 (fore-and-aft direction) via the connecting arm 31, the ball joint 29, the drive arm 25, and the supporting arm 26, and thus the therapeutic members 8, 9 make a rapping movement. Since one of the eccentric shaft portions 20A is off-centered in the opposite direction from the other one, the therapeutic members

8, 9 on the left side and the right side make rapping motion alternately.

When the kneading motion shaft 19 receives a rotational power, the inclined shaft portion 19A rotates along a conical surface, and thus the drive arm 25 reciprocates with the ball joint 29 as a fulcrum, and consequently, the therapeutic member 9 on the left side and the right side make reciprocated pivotal movement in the direction B1 (in the lateral direction) so as to move toward and away from each other, and perform a kneading motion.

The mechanism to select and rotate one of the kneading motion shaft 19 and the rapping motion shaft 20 is constructed for example as shown in Fig. 6.

In Fig. 6, a screw gear 33 is mounted on the rapping motion shaft 20, and a worm gear 34 is mounted on the kneading motion shaft 19. There is provided a guide shaft 35 vertically extending in front of, or behind the rapping motion shaft 20 and the kneading motion shaft 19, and a screw gear 36 to be engaged with the screw gear 33 and a worm 37 to be engaged with the worm gear 34 are provided on the guide shaft 35 rotatably with respect to the guide shaft 35.

On the end surfaces of the screw gear 36 and of the worm 37 on the guide shaft 35 facing toward each other, there are formed engagement tooth portions 36A, 37A that serve as clutches respectively. The guide shaft 35 is formed with a

trapezoidal screw thread 39 on the portion between the screw gear 36 and the worm 37, on which a movable helical gear 40 is mounted in engagement with its inner surface. The both end surfaces of the movable helical gear 40 is formed with engagement tooth portions 40A, 40A to be engaged with and disengaged from the engagement tooth portions 36A, 37A. A rotating drive shaft 43 is provided in parallel with the guide shaft 35, and the rotating drive shaft 43 is adapted to be switched to rotate in the direction shown by the arrow P or Q by the massage motor 10 via a pulley or a belt.

A helical gear 44 is mounted on the rotating drive shaft 43 and engaged with the helical thread on the outer surface of the movable helical gear 40, so that when the rotating drive shaft 43 rotates in the direction P, the movable helical gear 40 in engagement with the helical gear 44 rotates and moves along the trapezoidal screw thread 39 of the guide shaft 35 in the direction R, and the engagement tooth portion 40A of the movable helical gear 40 engages with the engagement tooth portion 36A of the screw gear 36 to rotate the screw gear 36. As a consequence, the rapping motion shaft 20 provided with the screw gear 33 to be engaged with the screw gear 36 rotates in the direction A. In contrast to it, when the rotating shaft 43 is rotated in the direction Q, which is the opposite direction from the direction P, the movable helical gear 40 moves in the direction S, which is the opposite direction from

the direction R, and engages with the worm 37 to rotate the kneading motion shaft 19 in the direction B.

Accordingly, when the rotating drive shaft 43 is rotated in the forward or reverse direction to move the movable helical gear 40 selectively in one of the directions R and S, one of the rapping motion shaft 20 and kneading motion shaft 19 is rotated to perform rapping motion or kneading motion with a plurality of therapeutic members 8, 9. Since the screw gears 33, 36 have almost the same number of teeth, rapping motion is performed relatively many times per unit time, but kneading motion is performed slowly since the turning effort is transmitted from the worm 37 to the worm gear 34 with significant speed reduction.

In Fig. 1 and Fig. 2, a pillow 51 is provided as an equipment of the massaging apparatus 1 to be arranged at the specific portion of the user's body. The pillow 51 is provided on the massaging apparatus 1 because placing the head portion of the user slightly forward of back portion is more natural and relaxing when the user is seated on the massaging apparatus 1 to be massaged.

As means for supporting the pillow 51, a pair of left and right supporting beams 52 is vertically fixed on the upper front of the seatback portion 4, and both of the left and the right sides of the pillow 51 is fitted and held on the pair of left and right supporting beams 52 so as to be vertically

slidable, so that the pillow 51 is vertically adjustably mounted on the front surface of the seatback portion 4. Between a receiving body 53 fixed on the upper end of the supporting beam 52 and the pillow 51, there is provided an accordion member 54 fitted on the supporting beam 52. When the user sits on the massaging apparatus 1 while moving the pillow 51 upward, the pillow 51 moves automatically downward by its own weight or the biasing force of the accordion member 54 and stops when the lower end of the pillow 51 abuts against the user's shoulder, so that the pillow 51 is arranged at the head portion of the user. It is also possible to fit the coil sprig on the supporting beam 52 instead of the accordion member 54.

A pair of left and right magnetic bodies 57 are provided corresponding to the pair of left and right first therapeutic members 8 at the lower end on the rear side of the pillow 51, and a plurality of magnetic sensors 58 composed of the Hall elements or the like are provided at regular intervals on the outer peripheral portions of the pair of left and right first therapeutic members 8 of the massaging unit 7, so that the first therapeutic member 8 approaches the magnetic body 57 in the pillow 51 most to turn any one of the magnetic sensors 58 ON when the first therapeutic member 8 reaches the position corresponding to the shoulder of the user. A detecting means 59 for detecting the position of the pillow 51 with respect to the massaging apparatus 1 is constructed of the magnetic

body 57 and the magnetic sensor 58 on the massaging unit 7.

The controlling system of the massaging apparatus 1 shown in Fig. 3 is now described. The detected signals indicating that the pillow 51 and the massaging unit 7 are in the vicinity with respect to each other and detected (turned ON) by the magnetic sensor 58 are fed to a control unit 61 constructed of a microcomputer or the like.

As shown in Fig. 1, an upper limit switch S1 is provided at the uppermost position of the vertical movement of the massaging unit 7 (supporting arm 26) and a lower limit switch S2 is provided at the lowermost position, and the massaging unit 7 is controlled by the control unit 61 so as to move vertically between the uppermost position and the lowermost position. A position detector 62 for detecting the vertical position of the massaging unit 7 from the number of revolutions of the hoist motor 16 is provided, and the detected signals detected by the position detector 62 are fed to the control unit 61.

The control unit 61 constructed of a microcomputer or the like is adapted to control the massage motor 10 and the hoist motor 16 according to the program of an automatic course.

The control unit 61 makes the massaging unit 7 reciprocate vertically along the user's body (performs a rolling motion with the massaging unit 7) with the first therapeutic member 8 and the second therapeutic member 9

abutted against the user as an initial action when the automatic course is selected by a remote controller 63 or the like. In this case, the specific portion of the user's body, or the position of the shoulder, with respect to the massaging apparatus 1 is determined from the relation with respect to the position of the massaging unit 7 at the moment when any of the magnet sensors 58 is turned ON. In other words, when the magnetic sensor 58 is turned ON, the detecting means 59 detects that the pillow 51 and the massaging unit 7 are in the vicinity with respect to each other, and the specific portion of the user, or the position of the shoulder, with respect to the massaging apparatus 1 is determined by the control unit 61 from the position of the massaging unit 7 detected by the position detector 62.

More specifically, the massaging unit 7 is moved upward and downward with the first therapeutic member 8 and the second therapeutic member 9 abutted against the user and the supporting arm 26 is moved vertically along the user's body together with the drive arm 25. When the first therapeutic member 8 reaches the position of the user's shoulder, the pillow 58, which is the equipment of the massaging apparatus 1, and the massaging unit 7 comes closer to each other to turn the magnetic sensor 58 ON, so that the detecting means 59 detects the position of the pillow 58 with respect to the massaging apparatus 1. The detected signal of the magnetic sensor 58

(detecting means 59) is fed to the control unit 61, and then the control unit 61 determines the shoulder position of the user with respect to the massaging apparatus 1 from the position of the massaging unit 7 at this time.

The rolling motion here means the effective massaging action that the therapeutic member 8, 9 stimulate the vertical linear portion so called meridian along which the meridian points, or the pressure points, are aligned at intervals of about 70 mm on the back along the backbone of the human body. Therefore, it normally means the massaging action that is considered to be effective when it is performed prior to the kneading and rapping motion.

According to the embodiment descried above, when the user sets the pillow 58 to his/her shoulder position prior to performing the therapeutic course, selects a desired therapeutic course by operating the remote controller 63 or the like, and presses the start button for example on the remote controller 63 or the like, the massaging unit 7 starts to move vertically from the uppermost position as a point of origin. When moving the massaging unit 7 vertically along the user's body, the first therapeutic member 8 and the second therapeutic member 9 of the pair of left and right supporting arm 26 move upward and downward while being abutted against the shoulder, back and hip of the user. When the first therapeutic member 8 reaches the position corresponding to the user's shoulder

by the upward movement of the massaging unit 7, the first therapeutic member 8 reaches the position corresponding to the lower end portion of the pillow 58, and a magnetic force of the magnetic body 57 in the pillow 58 turns the magnetic sensor 58 ON, thereby ensuring that the detecting means 59 easily detects the position of the pillow 58 with respect to the massaging apparatus 1. The position of the massaging unit 7 detected by the position detector 62 (vertical position of the massaging unit 7) is determined as the position of the user's shoulder with respect to the massaging apparatus 1 and stored in the memory of the control unit 61, and then the specific portion of the user, or the position of the user's shoulder, with respect to the massaging apparatus 1 is accurately recognized by the control unit 61 from the position of the massaging unit 7 (vertical position of the massaging unit 7) at the moment when the magnetic sensor 58 is turned ON. The stored information can be called up when processing the position to be treated in the therapeutic course as needed.

As is described thus far, by determining the shoulder position of the user with respect to the massaging apparatus 1 accurately, a position of a desired portion of the user's body can be calculated accurately from the shoulder position of the user, and thus the first therapeutic member 8 or the second therapeutic member 9 is moved accurately to the desired portion to make a massage on that desired portion. In addition,

by selecting an automatic massage course, more effective massage can be performed. In case of stimulating pressure points, which is well on its way to becoming a boom recent years, the positions of the pressure points can be determined from the position of the user's shoulder accurately to some extent, and thus a massage by stimulating pressure points can be performed effectively.

Fig. 7 shows another embodiment, in which the massaging apparatus 1 is provided, as its equipment, with a remote controller 63 for controlling the massaging apparatus 1 instead of the pillow 58, and a magnetic body 57 is incorporated in one end of the remote controller 63. As in the case of the above-described embodiment, a plurality of magnetic sensors 58 constructed of the Hall elements or the like are provided at regular intervals on the outer peripheral portions of the pair of left and right first therapeutic members 8 of the massaging unit 7, and a detecting means 59 for detecting the position of the remote controller 63 with respect to the massaging apparatus 1 is constructed by the magnetic body 57 in the remote controller 63 and the magnetic sensor 58 in the massaging unit 7. Other constructions are the same as the above-described embodiment.

In this case, as shown in Fig. 7, when the user placed the remote controller 63 at his/her shoulder position, the magnetic sensor 58 is turned ON and then the detecting means

59 detects the position of the remote controller 63 with respect to the massaging apparatus 1, so that a control unit 61 determines the position of the specific portion of the user with respect to the massaging apparatus 1 as in the above-described embodiment.

According to this embodiment, when the therapeutic massage course, for example, is selected by the remote controller 63 or the like, and then the start button is pressed, the massaging unit 7 starts the vertical movement. In this state, the user places the remote controller 63 on his/her shoulder to inform the position of his/her shoulder to the massaging apparatus 1. When the first therapeutic member 8 reaches a position corresponding to the position of his/her shoulder during the upward and downward movement of the massaging unit 7, the first therapeutic member 8 on the massaging unit 7 is placed to a position corresponding to the position of the remote controller 63, and a magnetic force of the magnetic body 57 of the remote controller 63 turns the magnetic sensor 58 ON, thereby ensuring that the detecting means 59 easily detects the position of the pillow 58 with respect to the massaging apparatus 1. The position of the massaging unit 7 (vertical position of the massaging unit 7) detected at this moment by the position detector 62 is determined as the position of the user's shoulder with respect to the massaging apparatus 1 and stored in the control unit

61 or the like, and then the specific portion of the user, or the position of the user's shoulder, with respect to the massaging apparatus 1 is accurately recognized by the control unit 61 from the position of the massaging unit 7 (vertical position of the massaging unit 7) at the moment when the magnetic sensor 58 is turned ON. The vertical position is stored in the memory in the control unit 61.

In the above-described embodiment, while a plurality of magnetic sensors 58 constructed of the Hall elements or the like are provided at regular intervals on the outer peripheral portions of the pair of left and right first therapeutic members 8 of the massaging unit 7, it is also possible to provide only one magnetic sensor 58 constructed of the Hall element or the like on the outer peripheral portion of each of the pair of left and right first therapeutic members 8 of the massaging unit 7, or to provide the magnetic sensor 58 on one of the pair of left and right first therapeutic member 8. It is also possible to provide the magnetic sensor 58 on the second therapeutic member 9 instead of the first therapeutic member 8, or to provide the magnetic sensor 58 on the position other than the first therapeutic member 8 and the second therapeutic member 9 of the massaging unit 7.

While the magnetic body 57 is provide in the pillow 51 or the remote controller 63 and the magnetic sensor 58 is provided on the massaging unit 7 in the above-described

embodiment, in contrast to it, it is also possible to provide the magnetic sensor 58 is provided in the pillow 51 or the remote controller 63, and the magnetic body 51 on the massaging unit 7.

While the detecting means 59 for detecting the position of the pillow 51 or the remote controller 63 with respect to the massaging apparatus 1 is constructed of the magnetic body 57 on the pillow 51 or the remote controller 63 and the magnetic sensor 58 on the massaging unit 7 in the above-described embodiment, it is also possible to construct the detecting means 59 for detecting the position of the pillow 51 or the remote controller 63 with respect to the massaging apparatus 1 of an optical sensor having a light emitting element and a light receiving element alternatively. It is further possible to arrange a limit switch 63, lead switch 66 or the like vertically on the upper front portion of the seatback portion 4, so that the equipment of the massaging apparatus 1 such as the pillow 51 is directly detected by the limit switch 63 or the lead switch 66, and then the position of the pillow 51 or the like with respect to the massaging apparatus 1 is detected according to the position or the number of the limit switch 63 and the lead switch 66 turned ON, whereby the control unit 61 determines the shoulder position of the user.

While the present invention is applied to the chair type massaging apparatus in the above-described embodiments, the

massaging apparatus to which the present invention is applied is not limited to the chair type massaging apparatus, but rather be applicable to other types of massaging apparatuses such as a bed type massaging apparatus. It is also possible to apply the present invention to the massaging apparatus for massaging the leg portions of the human body, in which the knee position or the ankle position of the user is detected instead of the shoulder position.

Alternatively, it is also possible to employ an alarm means such as a sound, a display on the screen, a light indicator, or a voice to inform the user of the fact that the shoulder position is detected when the control unit 61 detected the shoulder position of the user with respect to the massaging apparatus 1.

[Effect of the Invention]

According to the present invention, the position of the specific portion of the user's body such as the shoulder position with respect to the massaging apparatus can be easily and accurately determined in a simple construction.

[Brief Description of the Drawings]

Fig. 1 is a general side view of the massaging apparatus showing an embodiment of the present invention.

Fig. 2 is a perspective view of the upper portion of the massaging apparatus.

Fig. 3 is a block diagram of the control system.

Fig. 4 is a perspective view of the massaging unit.

Fig. 5 is a front view showing a part of the massaging unit.

Fig. 6 is a perspective view of the transmission mechanism of the massaging unit.

Fig. 7 is a general side view of the massaging apparatus showing another embodiment.

[Description of the Reference Numerals]

1	chair type massaging apparatus
4	seatback portion
7	massaging unit
8	first therapeutic member
9	second therapeutic member
51	pillow
57	magnetic body
58	magnetic sensor
59	detecting means
61	control unit
63	remote controller

[Document Name] Abstract of the Disclosure

[Abstract]

[Object]

To provide massaging apparatus capable of easily and accurately determining a position of a specific portion of a user's body such as a shoulder position with respect to the massaging apparatus in a simple construction.

[Means for Solving the Problem]

A massaging apparatus is provided with an equipment to be arranged on a specific portion of a user's body, so that a position of the equipment with respect to the massaging apparatus is detected to determine a position of the specific portion of the user with respect to the massaging apparatus. Further, the massaging apparatus is provided with an equipment to be arranged on a specific portion of the user's body and detecting means 59 for detecting the position of the equipment with respect to the massaging apparatus, so that the position of the specific portion of the user with respect to the massaging apparatus is determined from the position of the equipment with respect to the massaging apparatus detected by the detecting means 59.

[Selected Drawing] Fig. 1

FIG. 1

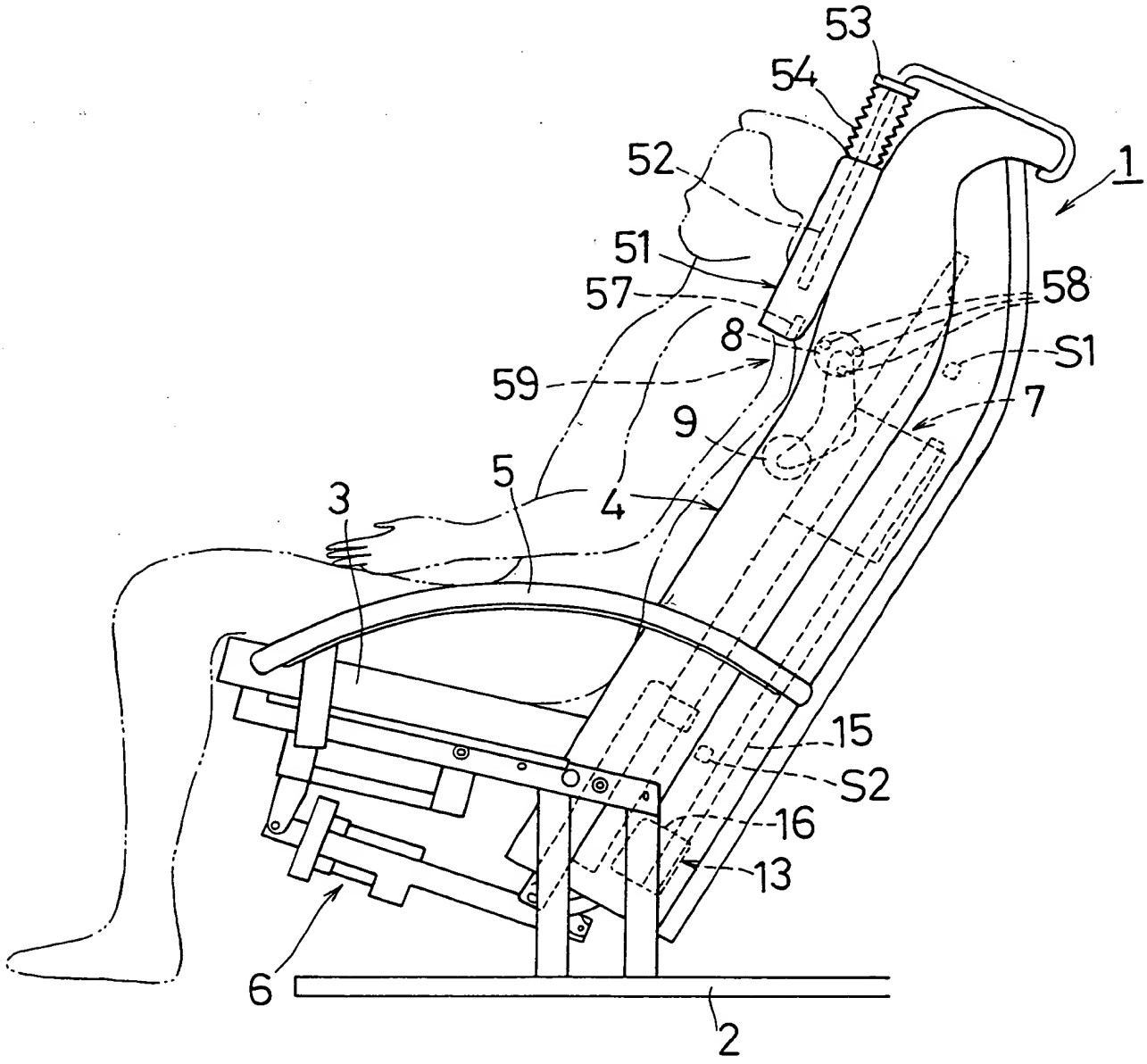

FIG. 2

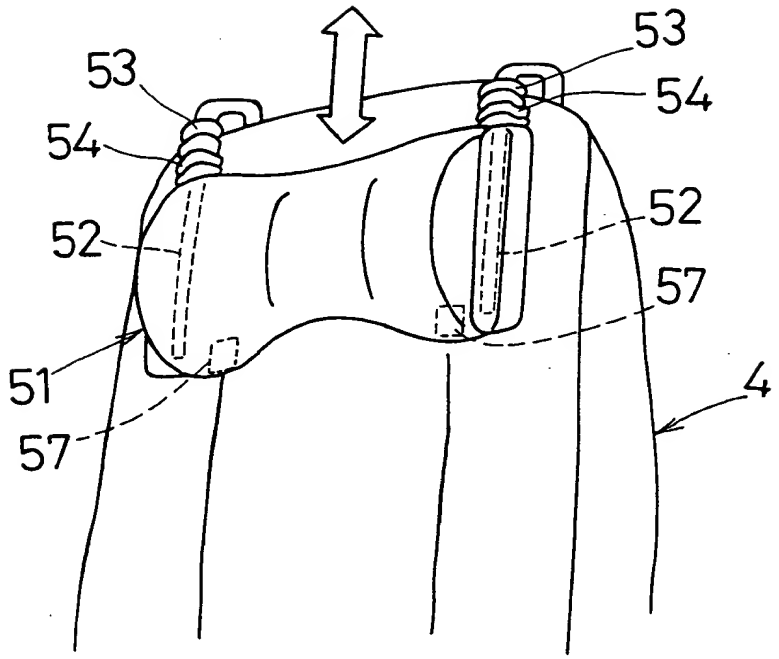

FIG. 3

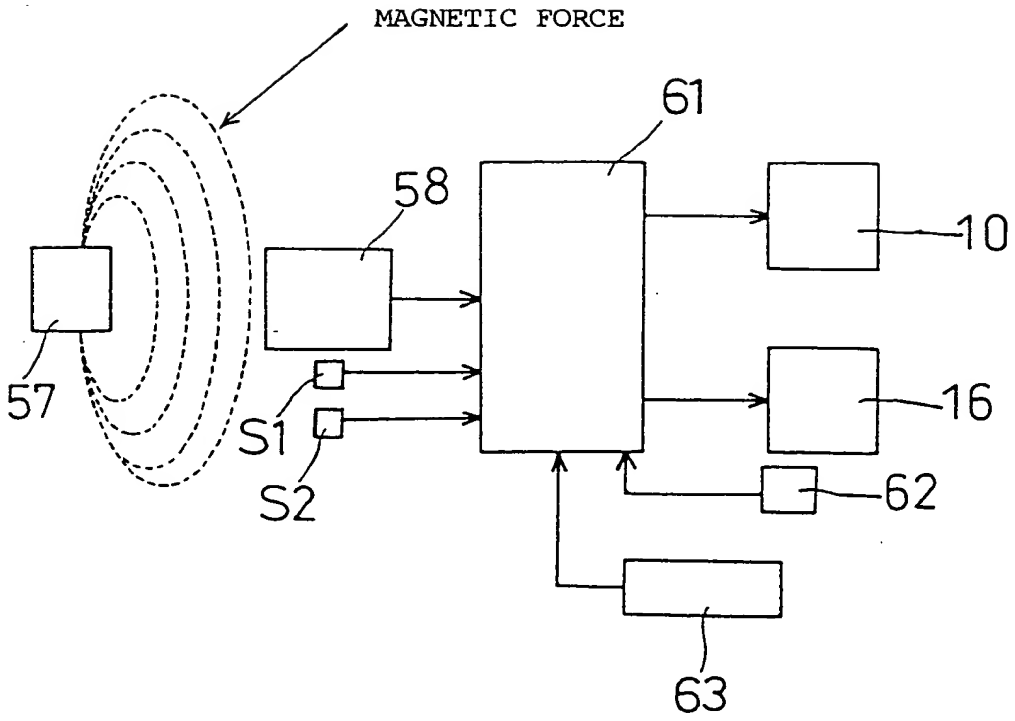

FIG. 4

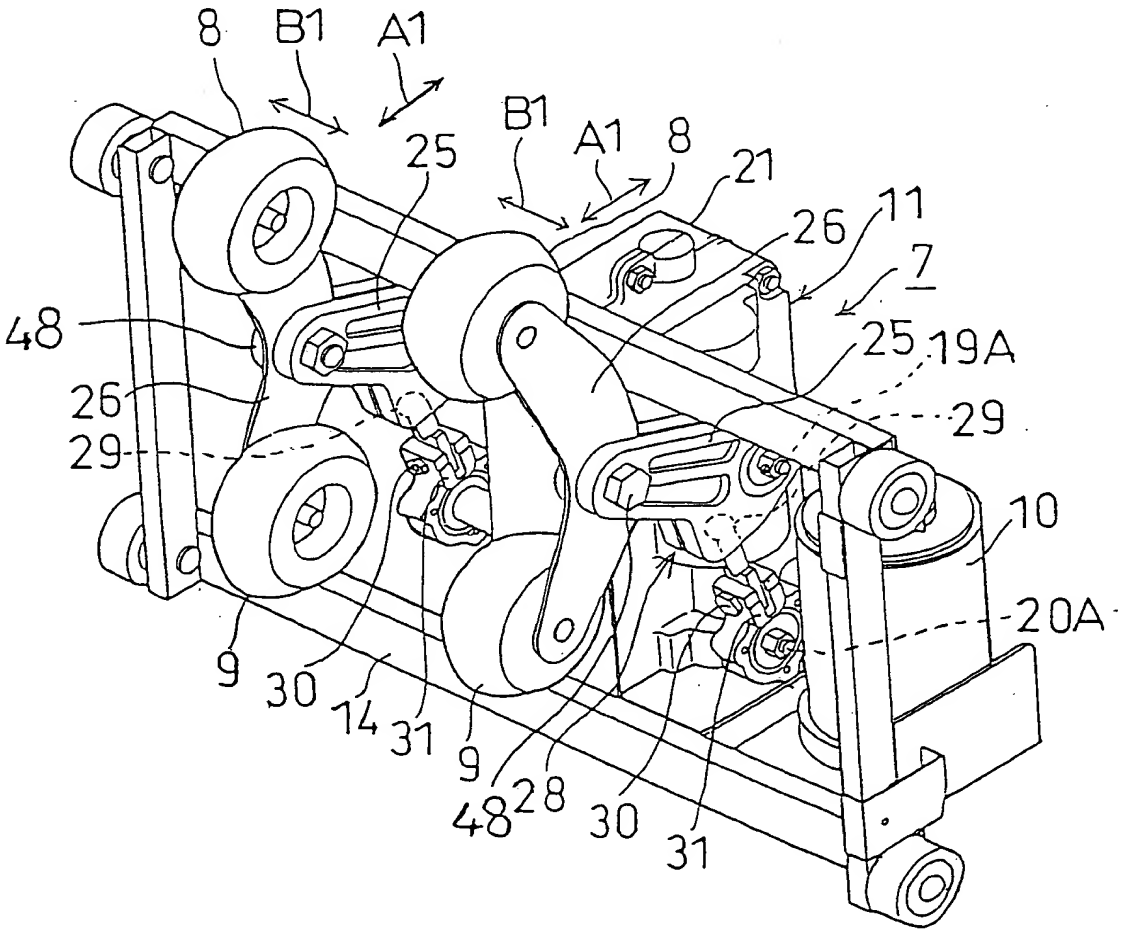

FIG. 5

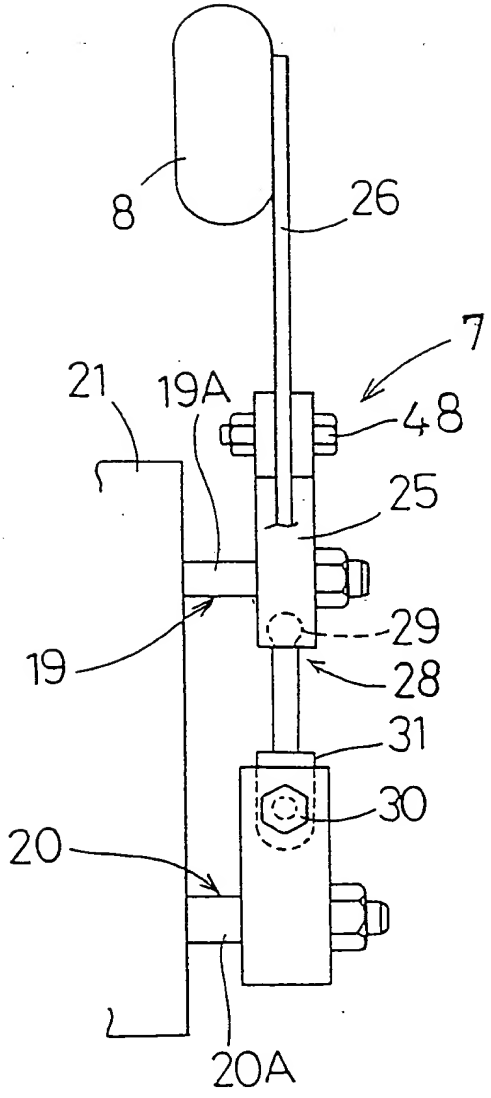

FIG. 6

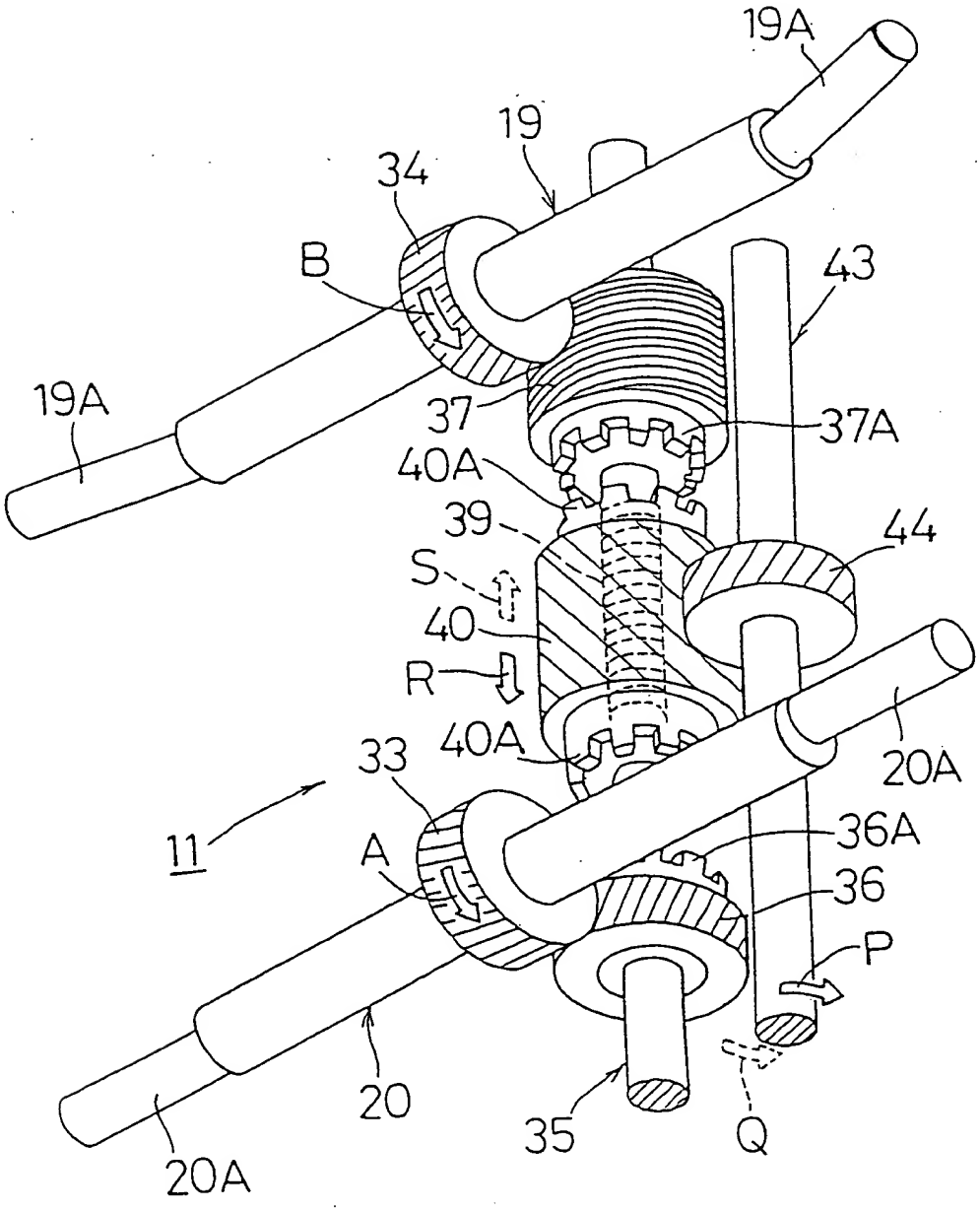

FIG. 7